

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A process to load a drug into a cross-linked polymer, comprising the following steps:

- a. pre-treating said cross-linked polymer with ~~substantially pure~~ supercritical fluid free from any drugs;
- b. contacting said pre-treated cross-linked polymer with supercritical fluid containing a drug dissolved therein;
- c. removing the supercritical fluid, thereby causing the drug to precipitate inside the cross-linked polymer.

2. (Previously presented) Process according to claim 1, wherein in step a., the cross-linked polymer is maintained in contact with the supercritical fluid for a time between 1 minute and 6 hours.

3. (Previously presented) Process according to claim 1, wherein in step a., the cross-linked polymer is maintained in contact with the supercritical fluid for a time between 5 minutes and 4 hours.

4. (Previously presented) Process according to claim 1, wherein in step b., the pre-treated cross-linked polymer is maintained in contact with the supercritical fluid for a time between 2 minutes and 48 hours.

5. (Previously presented) Process according to claim 1, wherein in step b., the pre-treated cross-linked polymer is maintained in contact with the supercritical fluid for a time between 10 minutes and 12 hours.

6. (Previously presented) Process according to claim 1, wherein the contact of the cross-linked polymer with the supercritical fluid is effected in static and/or dynamic conditions.

7. (Currently amended) Process according to claim 1, wherein said supercritical fluid is ~~chosen among~~ selected from the group consisting of carbon dioxide, ethylene, propylene, chlorofluorocarbon, nitrous oxide, and mixtures thereof.

8. (Currently amended) Process according to claim 1, wherein said cross-linked polymer is ~~chosen among~~ selected from the group consisting of cross-linked polyvinylpyrrolidone, cross-linked cellulose ~~derivatives~~, starch ~~and its derivatives~~, cross-linked cyclodextrins ~~and their derivatives~~, cross-linked polystyrene, cross-linked acrylic polymers, and mixtures thereof.

9. (Currently amended) Process according to claim 1, wherein the thus loaded drug is present in the cross-linked polymer in increased amorphous ~~and nanocrystalline~~ fraction compared to the original drug that is dissolved in the supercritical fluid.

10. (Currently amended) A method to increase the drug-loading capacity of a cross-linked polymer, comprising treating said cross-linked polymer with a supercritical fluid not containing any drugs, wherein the cross-linked polymer is selected from the group consisting of cross-linked cellulose ~~derivatives~~, starch ~~and its derivatives~~, and cross-linked cyclodextrins ~~and their derivatives~~.

11. (Previously presented) Method according to claim 10, wherein the cross-linked polymer is maintained in contact with the supercritical fluid for a time between 1 minute and 6 hours.

12. (Previously presented) Method according to claim 11, wherein the cross-linked polymer is maintained in contact with the supercritical fluid for a time between 5 minutes and 4 hours.

13. (Previously presented) Method according to claim 10, wherein the contact of the polymer with the supercritical fluid is effected in static and/or dynamic conditions.

14. (Currently amended) Method according to claim 10, wherein the supercritical fluid is ~~chosen among~~ selected from the group consisting of carbon dioxide, ethylene, propylene, chlorofluorocarbon, nitrous oxide, and mixtures thereof.

15. (Canceled)

16. (Withdrawn - currently amended) Modified cross-linked polymer, having enhanced drug-loading properties, obtainable from a cross-linked polymer selected from the group consisting of cross-linked polyvinylpyrrolidone, cross-linked cellulose ~~derivatives~~, starch ~~and its derivatives~~, cross-linked cyclodextrins ~~and their derivatives~~, cross-linked polystyrene and mixtures thereof by treating the cross-linked polymer with a supercritical fluid not containing any drug.

17. (Withdrawn) Modified cross-linked polymer according to claim 16, obtainable by treating the cross-linked polymer with the supercritical fluid for a time between 1 minute and 6 hours.

18. (Withdrawn) Modified cross-linked polymer according to claim 17, obtainable by treating the cross-linked polymer with the supercritical fluid for a time between 5 minutes and 4 hours.

19. (Withdrawn - currently amended) Modified cross-linked polymer according to claim 16, wherein the supercritical fluid is ~~chosen among~~ selected from the group consisting of carbon dioxide, ethylene, propylene, chlorofluorocarbon, nitrous oxide, and mixtures thereof.

20. (Withdrawn) Modified cross-linked polymer according to claim 16, loaded with a drug.

21. (Withdrawn) Pharmaceutical composition containing a modified cross-linked polymer according to claim 20.